



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

646.3014
Job Sheet 186716



✓
LOAD

Part No: 646.3014

Job Qty: 4 ea

Part Name: Blade



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 11/20/18

Job Tracking No:

Due Date: 12/28/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG REV N/C SHEET 11 IPP REV:A NEW ISSUE 12/11/09 JFS VERIFY BY: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	4 Ea	12/28/18	12/28/18	0.00	0.00	Start Up Machining-1		Jan 18/12/18
100	Bandsaw	4 pcs	12/28/18	12/28/18	0.00	0.21	Bandsaw1		Jan 18/12/18
110	CNC Vertical Machining	4 pcs	12/28/18	12/28/18	0.63	3.22	HAAS1-1		Jan 18/12/18
120	QC	4 pcs	12/28/18	12/28/18	0.00	0.00	QC2 Machining-1		Jan 18/12/18
130	QC	4 pcs	12/28/18	12/28/18	0.00	0.00	QC8 Machining-1		Jan 18/12/18
140	Outsource	4 pcs	12/28/18	12/28/18			MEI001-VC	10	Jan 18/12/18
150	Packaging	4 pcs	12/28/18	12/28/18	0.00	0.00	Packaging2		Jan 18/12/18
155	QC	4 pcs	12/28/18	12/28/18	0.00	0.00	QC5		Jan 18/12/18
160	SprayPaint	4 pcs	12/28/18	12/28/18	0.00	0.11	Spray Paint		Jan 18/12/18
170	QC	4 pcs	12/28/18	12/28/18	0.00	0.00	QC14		Jan 18/12/18
180	Packaging	4 pcs	12/28/18	12/28/18	0.00	0.00	Packaging3-1		Jan 18/12/18
190	QC21-SA	4 Ea	12/28/18	12/28/18	0.00	0.00	QC21		Jan 18/12/18

Part Op 100 - Cut Blank at 2.670"

Descriptions: 110 - 1-Machine per folio FB150

140 - HEAT TREAT AS PER DWG, SEE NOTE #3

160 - PRIME AS PER DWG, SEE NOTE #4

180 - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
MSTEEL-A2-B0.500X1.250	AISI A2 Tool Steel Bar, 0.500 X 1.250	.8920 ft (.223 ea)	90-Start up Operation	5132658

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	MSTEEL-A2-B0.500X1.250	1	37	0

Part Specifications

Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Blade	0.375inches ± 0.010	0.385 0.365		
2	Blade	0.940inches ± 0.030	0.970 0.910		

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐				
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																					
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																					
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																					
Large Fab ☐	Composite ☐	Supplier ☐																						
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval																				
Description Work Order Deviation		Disposition		Completed By																				
				Lead hand / Supervisor Approval Verification																				
				QC / QA Coordinator Approval																				
Enviro Doc Equip/T Handlin Ma Internal Tran Tribal Know Subst Past Expiry Misidentifi DART Aerospace Ltd. 1270 Aberdeen Street Hawkesbury, ON K6A 1K7 CANADA TEL.: 1 613 832-5200 Email: sales@dartaero.com www.dartaerospace.com Container No: S136468 Part: 646.3014 Job No: 186716 Serial No/Batch: S136468 Revision: _____ Inspector: _____ Exp Date: _____ Instructions: _____ Date: 12/10/18	CATEGORY <table style="width:100%; border: none;"> <tr> <td style="border: none;">☐ Power Loss/ Surge</td> <td style="border: none;">☐ Positioned Wrong</td> </tr> <tr> <td style="border: none;">☐ Folio/Program</td> <td style="border: none;">☐ Outside Dimensions</td> </tr> <tr> <td style="border: none;">☐ Grain</td> <td style="border: none;">☐ Over/Under tolerance</td> </tr> <tr> <td style="border: none;">☐ Weld</td> <td style="border: none;">☐ Part Incorrect</td> </tr> <tr> <td style="border: none;">☐ Wrong Stock Pulled</td> <td style="border: none;">☐ Part Lost/Missing</td> </tr> <tr> <td style="border: none;">☐ Out of Sequence</td> <td style="border: none;">☐ Part Moved</td> </tr> <tr> <td style="border: none;">☐ Off-set</td> <td style="border: none;">☐ Drawing</td> </tr> <tr> <td style="border: none;">☐ Mislabeled</td> <td style="border: none;">☐ Finish</td> </tr> <tr> <td style="border: none;">☐ Fit/Function</td> <td style="border: none;">☐ Misread</td> </tr> <tr> <td style="border: none;">☐ Misaligned/off center</td> <td style="border: none;">☐ Turning Sequence</td> </tr> </table>				☐ Power Loss/ Surge	☐ Positioned Wrong	☐ Folio/Program	☐ Outside Dimensions	☐ Grain	☐ Over/Under tolerance	☐ Weld	☐ Part Incorrect	☐ Wrong Stock Pulled	☐ Part Lost/Missing	☐ Out of Sequence	☐ Part Moved	☐ Off-set	☐ Drawing	☐ Mislabeled	☐ Finish	☐ Fit/Function	☐ Misread	☐ Misaligned/off center	☐ Turning Sequence
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☐ Fit/Function	☐ Misread																							
☐ Misaligned/off center	☐ Turning Sequence																							
OTHER : _____																								

3	Blade	0.524inches $\pm$ 0.010	0.534 0.514	
4	Blade	0.229inches $\pm$ 0.002	0.231 0.227	
5	Blade	1.313inches $\pm$ 0.002	1.315 1.311	
6	Blade	2.540inches $\pm$ 0.030	2.570 2.510	
7	Blade	2.395inches $\pm$ 0.010	2.405 2.385	
8	Blade	2.128inches $\pm$ 0.010	2.138 2.118	
9	Blade	0.177inches + 0.005 - 0.001	0.182 0.176	diameter
10	Blade	0.524inches $\pm$ 0.010	0.534 0.514	
11	Blade	0.569inches $\pm$ 0.002	0.571 0.567	
12	Blade	66.500Degrees $\pm$ 0.500	67.000 66.000	Angle
13	Blade	60.000Degrees $\pm$ 0.500	60.500 59.500	Angle

Plex 11/20/18 1:09 PM Dart.lajeunesse.marie

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
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Canada

Tel (613) 632-5200

PURCHASE ORDER

PO042098



Supplier: MEI001-VC
Metcor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J7R 5A8 Canada
Phone: 450 473 1884
Fax: 450 491 5498

PO No: PO042098
PO Date: 12/18/18
Due Date: 1/11/19
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Tsimiklis, ChrisoulaPhone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	185776	646.3316	Blade HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58- 62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed	-	1/11/19	30 pcs	0 pcs	30 pcs	\$4.4571428/pcs	\$133.71

Line Item Note **need as soon as possible**

2	186716	646.3014	Blade HEAT TREAT AS PER DWG, SEE NOTE #3	Firmed	-	1/11/19	20 pcs	0 pcs	20 pcs	\$4.4571428/pcs	\$89.14
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PURCHASE ORDER

PO042098



Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
3	186715	646.3013	Blade ISSUE P/O: FINISH: HEAT TREAT TO 58- 62 RC ROCKWELL HARDNESS As Per Dwg 646.3000 PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed	-	1/11/19	20 pcs	0 pcs	20 pcs	\$4.4571428/pcs	\$89.14
Grand Total:											\$312.00

Order Notes

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 1/11/19 1:32 PM dart.tsimiklis.chrisoula

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
332982	1	133777

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À /Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
42098 ✓		A2	2018/12/19	client

QUANTITÉ Quantity	No. PIÈCE / Part No.	NOM DE LA PIÈCE / Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
----------------------	-------------------------	--------------------------------	---	-----------------

✓ 70 646.3316 27,
(30) 646.3316 JOB 185776 ✓
(20) 646.3014 JOB 186716 ✓
(20) 646.3013 JOB 186715 ✓

1 VALISE

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
-------------------------------------	------------------------------------	--

VALISE 1

certificat

EXPÉDIÉ PAR: Shipped by:	
-----------------------------	--

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 70

POIDS EXPÉDIÉ / Weight Shipped : 27,00

QUANTITÉ RESTANTE / Quantity Remaining : 0

POIDS RESTANT / Weight Remaining : 0,00

APPROUVÉ

certificat

QUANTITÉ EXPÉDIÉE / Quantity Shipped: 70

POIDS EXPÉDIÉ / Weight Shipped : 27,00

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2019/01/11

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détail

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
332982	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
42098	N/A	A2		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results	
HARDNESS	58 - 62 HRC	11 (907)	61 - 62 HRC	
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
70	27	646.3316 (30) 646.3316 JOB 185776 (20) 646.3014 JOB 186716 (20) 646.3013 JOB 186715 1 VALISE		

COMMENTAIRES / comments

VAC HARDEN 1800F, 1 HR
DOUBLE TEMPER 400F, 2 HRS

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

Ce document et les documents qui lui sont joints peuvent contenir des informations confidentielles, être soumis aux réglementations relatives au contrôle des exportations ou ayant un caractère privé. S'ils ne vous sont pas destinés, nous vous signalons qu'il est strictement interdit de les divulguer, de les reproduire ou d'en utiliser de quelque manière que ce soit le contenu. Toute exportation ou réexportation non autorisée est interdite.

11 JAN 2019

Isabel Otero

Isabel Otero
Technician

METCOR
12

DAS
38
8-89

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité

Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
332982	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
42098 ✓	N/A	A2		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed RÉSULTATS DE TESTS / results

HARDNESS

58 - 62 HRC

11

61 - 62 HRC

(907)

DAS
38
9-89

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
70 ✓	27	646.3316 ✓ (30) 646.3316 JOB 185776 ✓ (20) 646.3014 JOB 186716 ✓ (20) 646.3013 JOB 186715 ✓ 1 VALISE

COMMENTAIRES / comments

APPROUVÉ par / Approved by:

DATE: 2019-01-11

Pierre Piché
Chief Inspector

METCOR
6

APPROUVÉ